



### Module 3

## Doing a Noise Audit

### Purpose of this module

This module provides necessary training needed to do a noise audit. It also describes how to conduct a noise audit.

It will cover the following topics:

- ✓ Conducting basic noise measurements
- ✓ Hearing loss prevention recordkeeping

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### Module 3

## Doing a Noise Audit

The following is needed to do a noise audit:

- Audit form, checklists, clipboard



- Previous noise measurement records



- Hearing protection



- Sound level meter



A map or sketch of your workplace or jobsite showing noisy areas may also be useful.

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## Doing a Noise Audit

The following employees should be checked during a noise audit:

workers who you know or suspect are exposed to noise above 85 decibels,

workers wearing hearing protection,

and are:

present on the day of the audit,

working at normal or full production level.



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## Doing a Noise Audit

### Four things to check in a noise audit:

1. Has employee noise exposure changed?  
(requires a sound level meter survey)
2. Is hearing protection appropriate for conditions?
3. Is hearing protection worn properly?
4. Are employees satisfied with their hearing protection?



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## Noise Measurements

### Sound Level Meters

A sound level meter measures noise at any particular moment.

They are good for spot checking and determining loudness of equipment.

They are useful for noise audits.



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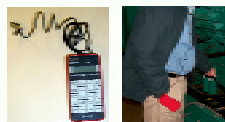
## Noise Measurements

### Taking Noise Measurements

- Take noise readings with a **sound level meter** in noisy areas where employees work.
- Compare to previous noise survey.
- Determine if worker's noise exposure has changed.
- Where noise is highly variable, you may need to take **noise dosimeter** readings.



Sound level meter



Noise dosimeter

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## Noise Measurements

### Taking sound level meter measurements

- Take noise measurements at employee's normal work location and near their ear.
- Take all readings in the "A-scale" and "slow response" mode.
- Estimate employees' length of exposure.
- Highly mobile or inaccessible employees may need noise dosimeter measurements.



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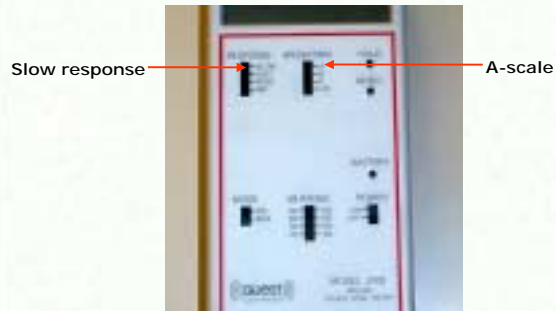
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## Noise Measurements

### Sound level meter settings



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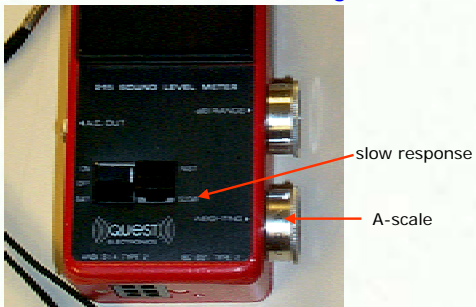
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## Noise Measurements

### Sound Meter Settings



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## Noise Measurements

### Estimating average noise levels from sound level meter readings

If an employee is exposed to several different noise levels, you can estimate average noise level with the following formula:

$$D = 100(C_1/T_1 + C_2/T_2 \dots C_n/T_n)$$

C = time at specific noise level

T = reference duration # from Table HT-1

If D is greater than 50, than average noise level exposure of that employee is over 85 decibels

To use Table HT-1 in Noise Rule and see examples, [click here](#)

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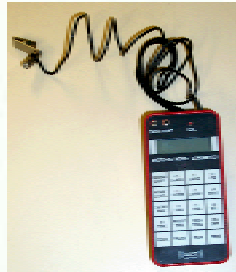
## Noise Measurements

### Noise Dosimeters

Noise dosimeters are used to measure average noise levels.

Dosimeters are worn by workers, usually for a full shift.

Dosimeters are useful for highly variable noise exposure or very mobile workers.



L & I consultants can be requested to do this activity

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## Noise Audit Procedures

### Observe and talk to employees

Check what hearing protection is worn and how it is used.

Check hearing protection for cleanliness and need for repair or replacing.

Ask employees if hearing protectors are comfortable and are protective enough.

Note any other comments by employees.



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## Hearing Protector Checklist

### What to check for in earmuffs

- ✓ Cover the whole ear?
- ✓ Positioned properly?
- ✓ Band snug, not too loose or tight?
- ✓ No interference from other PPE or glasses?
- ✓ Comfortable to employee?



For a copy of checklist, [click here](#)

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## Hearing Protector Checklist

### What to check for in foam earplugs

- ✓ Correct size?
- ✓ Inserted correctly?
- ✓ Properly seated?
- ✓ Clean?
- ✓ Comfortable to employee?



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## Hearing Protector Checklist

### Check following in preformed earplugs & earcaps:

#### Preformed Earplugs

- ✓ correct size?
- ✓ inserted correctly?
- ✓ properly seated?
- ✓ clean?
- ✓ comfortable to employee?



#### Earcaps

- ✓ noise level not above 95 decibels?
- ✓ other items same as earplugs



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## Noise Audit Recordkeeping

### Document Your Noise Audits

- Audit records must be kept for each employee checked as long as they work for you.
- The following must be included in the records:
  - ✓ make & model of hearing protectors,
  - ✓ size of protectors,
  - ✓ average noise exposure,
  - ✓ any problems found with protectors,
  - ✓ any comments from employees about protectors




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## Audit Recordkeeping

Sample Noise Audit Form #1

Date\_\_\_\_\_

For a copy of this form, [click here](#)

Company Name\_\_\_\_\_

Employee Name\_\_\_\_\_

Job Duties or Workstation\_\_\_\_\_

Make & Model of Hearing Protection\_\_\_\_\_

NRR of Hearing Protection\_\_\_\_\_

Size of Hearing Protection\_\_\_\_\_

Average Noise Exposure\_\_\_\_\_

Problems with Hearing Protection?\_\_\_\_\_

Employee Comments or Complaints\_\_\_\_\_

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## Audit Recordkeeping

Sample Noise Audit Form #2

Employee Name	Job Duties or Workstation	Make, Model & NRR of Hearing Protection	Hearing Protection Size	Average Noise Exposure (in decibels)	Problems with Hearing Protection Use?	Employee Comments or Complaints

For a copy of this form, [click here](#)

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## Noise Audit Follow-up

### Correct any hearing protection deficiencies

- Hearing protection must be replaced if it:
  - ✓ is the wrong size
  - ✓ doesn't fit properly
  - ✓ is soiled, damaged or broken
  - ✓ is uncomfortable to employee
  - ✓ is not protective enough (noise level has increased)
- You must assure employees use hearing protectors that provide them the needed protection.



Replace these!

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## Check Your Understanding

### Question 1

The following must be checked in a noise audit:

- How many employees are wearing earplugs,
- Current noise levels of machinery,
- Current noise exposure of employees,
- How well employees have been trained.

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## Check Your Understanding

### Question 2

Can a sound level meter be used to measure average noise level?

- Yes, it can do that.
- No, you must use a noise dosimeter.
- Yes, if you use a special formula.
- Yes, but only if you know how.

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## Check Your Understanding

### Question 3

The following should be done in a noise audit follow-up:

- a) Keep the records for at least a year,
- b) Replace hearing protection when needed,
- c) Fire employees who aren't wearing earplugs,
- d) Double-check noise levels.

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